

# Bureau of Land Management

## Amarillo Field Office Helium Operations Statistical Report

for  
September - 2019



### *Distribution:*

Fluid Minerals Group Manager, Washington Office  
NMSO, New Mexico State Director  
NMSO, Associate State Director  
NMSO, Petroleum Engineer  
Field Manager, Amarillo Field Office  
Assistant Field Managers (3)  
Team Leaders  
-Federal Leased Lands  
-Resources Evaluation & Gas Analysis  
-Division Of Helium Operations, -  
Engineering and Technical Support

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Amarillo, Texas  
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**"Please Note: Data in this report is accurate as of print date; however all data is subject to change."**

Approved for Distribution: *Samuel R.M. Burton*

Date: *January 16, 2020*

Table 1 - Summary of Helium Operations

September - 2019

**Helium Enrichment Unit Operations  
Gas Processed**

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Measured Plant Feed (Mcf*)	451,205	68,295	15.14%	1,398,200	211,916
Helium Product (Mcf*)	95,542	69,371	72.61%	295,821	214,467
Residue Natural Gas (Mcf*)	201,830	0	00.00%	676,513	0

\* Volumes in Mcf at 14.65 psia & 60°F

**Natural Gas & Liquids Produced  
Gas Processed**

	Month	FYTD
Natural Gas Sales (Mcf****)	200,451	2,828,462
NGL Sales (gallons)	83,991	1,073,249

\*\*\* Volumes in Mcf at 14.73 psia & 60°F

**Bush Dome Reservoir Operations  
Conservation gases from all sources**

	Month Gross Volume	Month Net Helium	Average Percent	Gross FYTD	Net FYTD
Total Withdrawn (Mcf*)	453,427	68,631	15.14%	1,401,417	212,385
Crude Injection (Mcf*)	0	0	00.00%	0	0
Crude Production (Mcf*)	0	0	00.00%	0	0

\* Volumes in Mcf at 14.65 psia & 60°F

**Storage Operations**

Conservation Helium	Volume Outstanding	Month	FYTD	CYTD	Cumulative
Conservation Crude Sale Volume Sold/Paid (Mcf*)		0	0	0	23,073,063
Conservation Crude Sale Volume Transferred (Mcf*)	0	0	0	0	1,203,477
Conservation Helium in Storage (EOM) (Mcf*)		2,809,679			

\* Volumes in Mcf at 14.65 psia & 60°F

**In Kind Helium**

	Month	FYTD	CYTD	Cumulative
Sale Volumes Transferred (Mcf*)	0	169,496	127,632	3,849,744
Sale Volumes Outstanding (Mcf*)	54,237			

\* Volumes in Mcf at 14.65 psia & 60°F

**Private Company Helium Storage Contracts**

Contact Activity	Month Gross Volume	Month Net Helium	Average Percent	Annual Helium FYTD
Crude Acquired (Mcf*)	14,008	9,860	70.39%	117589
Crude Disposed (Mcf*)	108,408	78,012	71.96%	953732
Net Balance (Mcf*)	(94,400)	(68,152)		(836,143)
Balance of Stored Helium End Of Month (Mcf*)		2,429,887		

\* Volumes in Mcf at 14.65 psia & 60°F

**Revenue / Charges**

Helium Storage Contracts (Charges Billed (\$))	Month	FYTD
Storage Fees Billed (\$)	\$108,692	\$5,469,346
Resource Management Fees Billed (\$)	\$0	\$3,124,584
Total Storage and RMF Collected	\$108,692	\$8,593,930

**Conservation Helium - Natural Gas - Liquid Sales**

(Charges Billed (\$))	Month	FYTD
Conservation Crude Helium Sales	\$0	\$0
In Kind Sales	\$4,478,775	\$16,182,867
Natural Gas & Liquid Sales	\$390,351	\$4,397,215

**Helium Resources Evaluation**

	Month	FYTD
Revenue Collected from Federal Lease Holds	\$376,091	\$22,224,967
Helium Sample Collection Report for month	Submitted - 0	Received - 0
		Analyzed - 19

\*Rounded to nearest dollar

Table 2 - Bush Dome Reservoir Operations

#####

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane	Methane	Ethane plus		Other (CO2, Ar, H2)	Cumulative
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	
<b>TOTAL</b>		<b>453,427</b>	<b>244,414,515</b>	<b>68,631</b>	<b>45,217,171</b>	<b>112,113</b>	<b>60,256,145</b>	<b>241,896</b>	<b>124,227,768</b>	<b>26,196</b>	<b>12,636,332</b>	<b>4,591</b>	<b>2,077,099</b>
BIVINS A-3	Sep-19	0	10,961,114	0	3,548,629	0	2,772,147	0	4,159,384	0	407,301	0	73,653
BIVINS A-6	Sep-19	44,076	13,234,389	15,925	7,572,414	10,984	3,258,731	15,121	2,121,618	1,694	214,406	353	67,219
BIVINS A-13	Sep-19	31,940	9,792,231	9,552	4,883,172	7,998	2,508,015	12,677	2,107,082	1,469	235,075	244	58,886
BIVINS A-14	Sep-19	36,608	11,067,580	8,436	5,917,403	8,978	2,794,741	16,942	2,061,549	1,904	223,812	349	70,075
BIVINS A-4	Sep-19	28,919	14,854,403	2,717	2,538,205	6,906	3,596,678	17,174	7,796,088	1,793	788,238	329	135,193
BUSH A-2	Sep-19	3,272	14,078,714	141	2,022,805	818	3,457,778	2,062	7,688,601	231	793,343	21	116,188
Injection	Sep-19	0	66,474,735	0	48,019,788	0	17,121,580	0	780,676	0	37	0	552,655
inj Bivins A-3	Sep-19	0	(25,652,315)	0	(18,384,452)	0	(6,554,549)	0	(332,777)	0	0	0	(380,537)
inj Bivins A-6	Sep-19	0	(24,412,686)	0	(17,669,978)	0	(6,486,588)	0	(143,192)	0	(72)	0	(112,856)
inj Bivins A-13	Sep-19	0	(6,490,417)	0	(4,706,191)	0	(1,656,853)	0	(122,391)	0	(2)	0	(4,980)
inj Bivins A-14	Sep-19	0	(6,501,333)	0	(4,767,421)	0	(1,602,106)	0	(126,303)	0	(7)	0	(5,497)
inj Bivins A-4	Sep-19	0	(2,527,801)	0	(1,848,815)	0	(601,353)	0	(42,016)	0	0	0	(35,617)
inj Bush A-2	Sep-19	0	(867,658)	0	(625,258)	0	(215,406)	0	(13,980)	0	0	0	(13,015)
Production	Sep-19	0	1,254,876	0	924,742	0	270,231	0	48,129	0	3,199	0	8,575
BIVINS A-1	Sep-19	0	2,686,608	0	48,896	0	636,995	0	1,798,415	0	175,704	0	26,597
BIVINS A-2	Sep-19	17,545	14,777,423	543	1,906,665	4,096	3,610,167	11,504	8,303,442	1,227	832,504	175	124,645
BIVINS A-5	Sep-19	23,299	17,067,078	4,087	2,232,489	5,896	4,193,977	11,839	9,529,880	1,286	963,710	191	147,023
BIVINS A-7	Sep-19	14,503	12,340,453	4,313	2,942,917	3,733	3,111,467	5,717	5,620,558	641	575,694	100	89,817
BIVINS A-9	Sep-19	26,431	11,615,197	780	229,753	6,706	2,867,910	16,848	7,633,594	1,864	778,522	233	105,418
BIVINS A-11	Sep-19	17,333	7,175,164	523	160,637	4,353	1,787,572	11,063	4,675,340	1,216	483,575	178	68,040
BIVINS A-15	Sep-19	31,414	11,150,468	529	453,448	7,267	2,648,637	21,031	7,204,794	2,187	725,246	401	118,343
BIVINS B-1	Sep-19	29,866	9,312,884	692	329,716	7,291	2,260,509	19,476	6,004,420	2,021	619,424	387	98,815
BIVINS B-2	Sep-19	26,164	7,777,118	486	146,492	6,591	1,949,578	16,791	5,044,818	1,799	522,975	497	113,254
BUSH A-1	Sep-19	0	5,721,962	0	104,140	0	1,356,677	0	3,830,281	0	374,216	0	56,647
BUSH A-3	Sep-19	26,337	13,265,125	8,239	3,235,493	6,594	3,286,028	10,158	6,014,932	1,118	613,060	229	115,611
BUSH A-4	Sep-19	21,750	9,470,146	1,643	1,651,345	5,548	2,373,413	13,021	4,877,226	1,410	501,304	128	66,859
BUSH A-5	Sep-19	39,681	18,245,649	9,357	4,235,807	10,057	4,585,686	18,046	8,432,451	1,979	866,203	242	125,502
BUSH A-8	Sep-19	15,236	4,967,175	277	91,031	3,766	1,206,638	9,875	3,271,632	1,043	332,301	275	65,573
BUSH A-9	Sep-19	0	3,860,915	0	105,037	0	930,915	0	2,537,187	0	253,463	0	34,312
BUSH A-11	Sep-19	14,975	5,088,044	322	144,398	3,583	1,217,333	9,833	3,327,344	1,020	339,080	217	59,889
BUSH B-1	Sep-19	4,076	3,492,022	70	65,344	949	828,015	2,718	2,333,124	297	231,309	42	34,231
FUQUA A-1	Sep-19	0	2,954,098	0	53,854	0	702,798	0	1,975,175	0	193,573	0	28,699
FUQUA A-2	Sep-19	0	132,119	0	2,404	0	31,322	0	88,458	0	8,637	0	1,297
FUQUA A-3	Sep-19	0	9,303,912	0	577,005	0	2,277,687	0	5,790,357	0	583,701	0	75,162
TT Fuel	Sep-19	0	0	0	0	0	0	0	0	0	0	0	0
field-wide pct				15.14%	18.50%	24.73%	24.65%	53.35%	50.83%	5.78%	5.17%	1.01%	0.85%

Latest estimates of reserves and feed to HEU

Based on NITEC's 2003 reserves study from NITEC's interim report

As of EOM Sep-19 Volumes in BCF

Initial Gas In Place	330.040	
Produced 1924 to 1961	48.830	
Injected 1924 to 1961	0.450	
Remaining Gas In Place 1961	281.660	
Left Behind Pipe, 1961	82.060	====> 1.500 BCF of contained helium
Remaining in Place, 1961	199.600	
Gas In Place 1961	199.600	
Produced 1961 to July 2002	82.450	
Injected 1961 to July 2002	64.510	Net Helium
Remaining Gas In Place July 2002	181.660	33.997
Produced July 2002 through Dec 2002	1.096	0.743
Production 2003 - 18	108.029	26.256
Injection 2003 - 18	(1.423)	(1.159)
Produced to Date 2019	4.050	0.614
Injected to Date 2019	0.000	0.000
Amount of Raw Gas Available to CHEU	69.908	====> 7.543 total helium in reservoir
Estimated Bottom Hole Pressure	257.531	est z-factor 0.980

\* All volumes on Table 2 are reported in Mcf at 14.65 psia & 60°F

## Table 3 - Gas Volumes & Inventory

September - 2019

### Crude Helium Enrichment Unit Operations

		Gross Withdrawal		Net Helium Withdrawal		Nitrogen		Methane		Ethane plus		Other (CO <sub>2</sub> , Ar, H <sub>2</sub> )	
		Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative	Month	Cumulative
Measured Feed	Sep-19	451,205	109,318,387	68,295	25,181,097	111,563	27,356,645	240,711	50,403,152	26,068	5,414,511	4,568	962,981
Calculated Feed	Sep-19	453,427	109,193,295	68,631	25,177,003	112,113	27,318,691	241,896	50,300,890	26,196	5,431,471	4,591	965,239
Feed to Box	Sep-19	449,469	108,470,253	68,631	25,177,182	112,113	27,318,773	241,896	50,300,936	26,196	5,431,465	633	241,896
Cheu Product	Sep-19	95,542	31,980,727	69,371	24,812,625	23,518	6,313,282	2,031	633,666	2	920	620	220,235
Residue	Sep-19	201,830	50,174,107	0	2,172	5,031	1,221,874	178,363	44,520,743	18,436	4,428,053	0	1,265
Cold Box Vent	Sep-19	69,740	17,865,887	50	90,958	60,500	15,846,900	9,175	1,866,279	1	123	14	61,626
Flare/Boot Strap	Sep-19	69,740	8,382,136	50	51,738	60,500	7,101,902	9,175	1,128,448	1	93,588	14	6,459
Fuel From Cheu	Sep-19	6,694	1,485,674	3	498	173	42,811	5,399	1,203,825	1,119	238,541	0	0
Shrinkage/Loss	Sep-19	6,639	572,040	0	0	0	0	0	0	6,639	572,040	0	0
Unaccounted*	Sep-19	69,023	4,211,443	(793)	166,648	22,890	3,059,890	46,929	979,879	(1)	1,097	(1)	3,929

\*Before October 2004, the values are estimated

### Storage Operations

#### Inventory (contained helium)

	Government	Private
Beginning inventory	2,812,281	2,498,039
net acceptances + redeliveries	0	0
	0	(68,152)
In Kind Transfers	0	0
Conservation Crude Sales	0	0
Gain/loss	(2,601)	
Ending Inventory	2,809,679	2,429,887
Total Helium in Reservoir	7,543,181	
Total Helium in Storage	5,239,566	
Helium in native gas	2,303,615	

#### Crude Helium Pipeline

	Gross	Net Helium	Percent
Beginning inventory	30,911	22,302	72.15%
Measured to Pipeline (Private Plants)	14,008	9,905	70.71%
Measured from Pipeline (Private Plants)	108,408	78,012	71.96%
HEU Production	95,542	69,371	72.61%
Injection	0	0	00.00%
Production	0	0	
Ending Inventory	29,052	20,965	72.16%
Gain/Loss	(3,002)	(2,601)	

### Tuck Trigg Reservoir Operations

Native Gas (Gross)	Month	Fiscal Year	Since Field
			Discovery
Total in place, beg. of period	5,198,688	5,198,688	5,890,000
Recoverable in place, beg. of period	4,528,688	4,528,688	5,220,000
Production during period to date	0	0	691,312
Total in place, end of month	5,198,688	5,198,688	5,198,688
Recoverable in place, end of month	4,528,688	4,528,688	4,528,688

\* All volumes on Table 3 are reported in Mcf at 14.65 psia & 60°F

Table 4 - In Kind Helium Sales

September - 2019

NASA*	Navy*	Army*	Air Force*	DOE*	Other Fed*	Subtotal*	In Kind+	Charges Billed (\$)**		
<b>In Kind Helium</b> (billed quarterly)										
<b>Airgas Merchant Gases, Contract no.</b>										
Month										
FYTD										
<b>Air Liquide Helium America, Inc., Contract no. INC18-0104</b>										
Month										
FYTD										
<b>Air Products, L.P., Contract no. INC18-0105</b>										
Month										
FYTD										
<b>Messer, LLC, Contract no. INC18-0106</b>										
Month										
FYTD										
<b>Praxair, Inc., Contract no. INC18-0112</b>										
Month										
FYTD										
<b>Matheson Tri-Gas, Inc., Contract no. INC18-0114</b>										
Month										
FYTD										
<b>Global Gases America, Contract no. INC18-0116</b>										
Month										
FYTD										
<b>Total month</b>										
	22,252	64	0	0	0	25,572	47,888	47,145	\$4,478,775	
<b>Total FYTD</b>										
	84,615	133	0	0	0	92,779	177,527	174,777	\$16,182,867	
<b>Total CYTD</b>										
	57,861	133	0	0	0	72,409	130,403	128,383	\$12,192,983	
<b>Cumulative</b>										
	2,133,065	108,818	450	271,593	422,045	1,029,337	3,965,307	3,903,906	\$240,563,437	
<b>In Kind Transfers</b>							Month	FYTD	CYTD	Cumulative
Transferred							0	169,496	127,632	3,849,744
Volume outstanding							54,237			

\* Volumes in Mcf at 14.7 psia &amp; 70°F

+ Volumes in Mcf at 14.65 psia &amp; 60°F

\*\*Rounded to nearest dollar

## Natural Gas / Natural Gas Liquid Sales

	Natural Gas (Mcf)**	NGLs (gal)	Decatherms	Avg Btu Value	Charges Billed (\$)**
<b>El Paso Natural Gas</b>					
Provides Measured Firm/Interruptible Transportation Services (billed monthly)					
Month	200,451	---	220,690	1,101	\$0
FYTD	2,828,462	---	3,117,719	1,102	\$0
Cumulative	49,516,038	---	53,914,769	1,089	(\$5,088,325)
<b>Minerals Management Service</b>					
No Longer Provides Natural Gas Marketing Services					
Cumulative	---	---	---	---	(\$179,913)
<b>ETC Marketing Ltd</b>					
Purchaser - Natural Gas					
Month	---	---	211,334	\$1.630376	\$344,554
FYTD	---	---	3,188,820	\$1.194548	\$3,809,197
Cumulative	---	---	53,805,359	\$4.102689	\$219,920,120
<b>Sandstone</b>					
Purchaser - Natural Gas Liquids					
Month	---	83,991	9,121	\$5.021102	\$45,797
FYTD	---	1,073,249	116,478	\$5.048322	\$588,018
Cumulative	---	15,447,821	1,646,642	\$10.407599	\$17,137,590
<b>Total</b>					
	Natural Gas (Mcf)**	NGLs (gal)	Purchased (Dth's)	\$\$ Per Unit (\$\$/Dth)	Total (\$)
<b>Total month</b>	200,451	83,991	220,455	\$1.770662	\$390,351
<b>Total FYTD</b>	2,828,462	1,073,249	3,305,298	\$1.330354	\$4,397,215
<b>Total CYTD</b>	1,804,042	701,739	2,092,100	\$0.971805	\$2,033,113
<b>Cumulative</b>	49,516,038	15,447,821	55,452,001	\$4.194908	\$231,789,471

\*\*\* Volumes in Mcf at 14.73 psia &amp; 60°F

\*\*Rounded to nearest dollar

Table 5 - Conservation Crude Sales/Reserve Sell-down

September - 2019

## Helium &amp; Natural Gas Sales

	Award Volume*	Outstanding*	Sales*	Charges Billed (\$) ** (billed quarterly)	
<b>Conservation Helium</b>					
<b><u>Air Liquide Helium America, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	335,217		335,217	\$25,454,815	
<b><u>Air Products, L.P.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	9,201,991		9,201,991	\$735,759,540	
<b><u>Messer, LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	6,310,276		6,310,276	\$437,286,782	
<b><u>Keyes Helium Co., LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	1,016,747		1,016,747	\$70,653,572	
<b><u>Matheson Tri-Gas, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	361,534		361,534	\$38,417,646	
<b><u>Praxair, Inc.</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	5,577,644		5,577,644	\$426,522,384	
<b><u>Global Gases America</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	37,767		37,767	\$3,798,165	
<b><u>Airgas Merchant Gases</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	15,667		15,667	\$1,488,365	
<b><u>IACX Energy</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	16,220		16,220	\$1,720,180	
<b><u>Uniper Global Commodities North America LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	42,834		42,834	\$5,301,246	
<b><u>Weil Group Resources LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	22,500		22,500	\$2,791,500	
<b><u>NAH USA Helium Marketing, Inc</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	12,834		12,834	\$1,611,246	
<b><u>Progressive Chemical Technologies LLC</u></b>					
Month	0	0	0	\$0	
FYTD	0	0	0	\$0	
Cumulative	1,500		1,500	\$262,500	
<b>Total month</b>					
	0	0	0	0	
<b>Total FYTD</b>					
	0	0	0	\$0	
<b>Total CYTD</b>					
	0		0	\$0	
<b>Cumulative</b>					
	23,073,063		23,073,063	\$1,762,102,941	
<b>Conservation Crude Transfers</b>					
Transferred		Month	FYTD	CYTD	Cumulative
Volume outstanding		0	0	0	1,203,477
		0			

\* Volumes in Mcf at 14.65 psia &amp; 60°F

## Table 6 - Helium Resources Evaluation

September - 2019

All Volumes in Mcf at 14.7 psia & 70°F

<b>Revenue Collected From Federal Leaseholds</b>	Month*	FYTD*
Fee Sales & Royalties	\$449,205	\$22,224,967
Natural Gas Royalties (1)	\$0	\$0
Natural Gas Rentals	\$0	\$0
Other	\$69,685	\$775,958
<b>Revenue Collected from Federal Lease Holds</b>	<b>\$376,091</b>	<b>\$22,224,967</b>

\*Totals do not sum

<b>Helium Analysis and Evaluation</b>	Month	FYTD
Number of Sample Request Letters Sent	0	0
Number of Samples Received	0	0
Number of Samples Analyzed	0	2
Total Number of Samples Analyzed For Resources Division	0	0
Total Number of Other Samples Analyzed (2)	19	217

### U. S. Helium Production

<i>Domestic</i>	FY Volume	CY Volume
2013 Helium Sold	4,725,187	4,623,130
2014 Helium Sold	4,279,765	4,166,708
2015 Helium Sold	3,815,746	3,463,698
2016 Helium Sold	3,282,185	3,466,014
2017 Helium Sold	4,559,100	4,644,278
Estimated Helium Resources as of 12/31/2016 (Mcf)		723,000,000

	FY-2017	CY-2017
<b>U.S. Helium Exports</b> (3)	2,520,645	2,451,207
<b>US Helium Imports</b>	731,407	666,908

(1) Includes drip gas sales & other miscellaneous gas sales.

(2) Includes pipeline, field survey, and other requested analyses.

(3) Data from Department of Commerce - Bureau of the Census.

Table 7 - Helium Storage Contract Activity

September - 2019

All Volumes in Mcf at 14.65 psia & 60°F

	Metered Gas					Transferred Gas Helium		Stored Helium EOM	Charges Billed (\$)**		
	Gross Gas	Helium %	Helium	Helium			Month		Cumulative	Month	FYTD
	Month		FYTD	CYTD	Cumulative						
<b>Total All Contracts*</b>											
Crude Acquired	14,008	70.4%	9,860	117,589	91,531	27,457,753	43,330	61,175,903			
Crude Disposed	108,408	72.0%	78,012	953,732	697,947	54,808,410	43,330	26,875,312	\$108,691.99	Storage Fees	
Grade-A Rdlvrd	0		0	0	0	1,478,718			\$0.00	RMF Fees	
Net/Balance	(94,400)		(68,152)	(836,143)	(606,416)	(28,829,375)	0	34,300,591	2,429,887	\$108,691.99 \$8,593,930	
<b>Total Prior Contracts (TERMINATED)</b>											
Crude Acquired			0	0	17,406,129		0	18,196,898			
Crude Disposed			0	0	11,830,863		0	19,148,768			
Grade-A Rdlvrd			0	0	1,478,718						
Number of trailers			0	0	9,834			0			
<b>Messer, LLC, Contract no. 3249</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Praxair, Inc., Contract no. 3251</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Products, L.P., Contract no. 3256</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Air Liquide Helium America, Inc., Contract no. 3284</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Keyes Helium Co., LLC, Contract no. 3287</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Matheson Tri-Gas, Inc., Contract no. 3288</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Airgas Merchant Gases, Contract no. 3290</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Global Gases America, Contract no. 3293</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Linn Operating, Inc., Contract no. 3296</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>IACX Energy, Contract no. 3297</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Uniper Global Commodities North America LLC, Contract no. 3298</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Weil Group Resources LLC, Contract no. 3299</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>NAH USA Helum Marketing, Inc, Contract no. 3300</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											
<b>Progressive Chemical Technologies LLC, Contract no. 3301</b>											
Crude Acquired											
Crude Disposed											
Net/Balance											

<b>Government Helium</b>	
Remaining Crude Acquired beginning of the month	2,812,281
Crude Disposed: In Kind Sales transferred for the month	0
Conservation Crude Sales/Reserve Sell Down transferred (in Kind)	0
Gains and Loses for the month	(2,601)
Net/Balance of Purchased Helium Remaining for Sale	2,809,679

\*Includes In Kind and Conservation Crude transfers from Government storage

\*\*Rounded to nearest dollar

\*\* New Contracts

## Table 8 - Compression & CHEU (Operations)

September - 2019

<b>Field/CHEU Compressor Operations</b>		Month	FYTD	Cumulative
Spot gas fuel price *	\$ per/MMBTU	\$1.63		
Fuel used * (now includes field compression well head)	total MMBTU	7,739	88,732	1,996,015
#1 Compressor run time *	hours	720	6,696	123,544
#2 Compressor run time *	hours	720	4,116	83,746
#3 Compressor run time *	hours	0	5,036	68,855

\* Field/CHEU Compressor Operations based on Sep 19 activity

<b>Crude Helium Enrichment Unit (CHEU) CHEU Runtime</b>	Month		FYTD		Cumulative
	Runtime Hrs	Percent	Runtime Hrs	Percent	Runtime Hrs
Processing feed gas	720	100.0%	8,469	96.7%	138,103
Producing residue gas	720	100.0%	8,317	94.9%	134,950
Producing helium product	720	100.0%	8,158	93.1%	131,114
Producing natural gas liquids	720	100.0%	8,272	94.4%	130,310

<b>CHEU Utility Usage</b>	Month	FYTD	Cumulative
Cheu Fuel Gas (Mcf) usage Sep 19	2,835	34,973	646,107
Cheu Pure Water Usage (gallons) Sep 19	681	9,629	325,793
Electricity Metered (Kwh) consumed Aug 19	2,544,620	28,761,090	213,195,627